

Programme and Course Outcome

M.Sc. (IT)

POST GRADUATE DIPLOMA IN COMPUTER APPLICATIONS (PGDCA)



**GOVT. KIRTI COLLEGE NIAL,
PATRAN (PATIALA)**

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Program Outcomes (POs)

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PO-1 : Apply knowledge of computer science and programming appropriate to the discipline and to provide effective solution in the area of computing

PO-2: Design, implement, and evaluate a computational system to meet desired needs of the industry

PO-3 :Function effectively in teams or as individual to accomplish shared computing design, evaluation, or implement goals.

PO-4 : Perform professionally with social, cultural and ethical responsibility as an individual as well as in multifaceted teams with positive attitude

PO-5 : Capable of adapting to new technologies and constantly upgrade their skills with an attitude towards independent and lifelong learning

Course Outcomes (COs)

M.Sc (IT) - I

Semester-1st

Code No.	Title of Paper
MS-111	Introduction to Information Technology
MS-112	Computer Programming using C
MS-113	Computer Organization and Architecture
MS-114	Mathematical Foundation of Computer Science
MS-115	Operating Systems
MS-116	Programming Lab – I

Semester-2nd

Code No.	Title of Paper
MS-121	Object Oriented Programming Using C++
MS-122	Data and File Structures
MS-123	Visual Basic
MS-124	RDBMS and Oracle
MS-125	Programming Lab – II
MS-126	Programming Lab – III

MSc (Information Technology)

Program Specific Outcomes (PSOs)

After completion of the course the student will

PSO-1: Have fundamental and advance knowledge in Programming Languages, Data Structure, Operating Systems, Computer Networks, Software Engineering, and Research Methods.

PSO-2: Have fundamental and advance level knowledge if Computer Science concepts to debug and develop professional solutions.

PSO-3: Be able to apply experimental expertise to solve computational problems in computer science

PSO-4: Be able to conduct research in the field of Information Technology ethically and professionally.

PSO-5: Be able to acquire and adapt to new skills to grow professionally.

MS-111 : Introduction to Information Technology

Programme & Course Outcomes of M.Sc(IT)

On completion of this course, the students will be able to:

CO-1: Have basic knowledge of computer hardware and software;

CO-2: Understand business areas to which computers may be applied;

CO-3: Provide an introduction to business organisation and information systems;

CO-4: Develop the skills in communication, verbal and written, which play an important part in business computing and information processing;

MS-112 : Computer Programming using C & MS-116 : Programming Lab-I

On completion of this course, the students will be able to:

CO-1: Write, compile and debug programs in C language. Use different data types, operators and console I/O function in a computer program.

CO-2: Design programs involving decision control statements, loop control statements and case control structures.

CO-3: Understand the implementation of arrays, pointers and functions and apply the dynamics of memory by the use of pointers.

CO-4: Comprehend the concepts of structures and classes: declaration, initialization and implementation.

CO-5: Apply basics of object oriented programming, polymorphism and inheritance.

CO-6: Use the file operations, character I/O, string I/O, file pointers, pre-processor directives and create/update basic data files.

MS-113 :Computer Organization and Architecture

On completion of this course, the students will be able to:

CO-1: Understand the basics of number system, computer arithmetic, computer hardware, how software interacts with computer hardware, how computers represent and manipulate data.

CO-2: Analyze and evaluate computer performance

CO-3: Assemble a simple computer with hardware design including data format, instruction format, instruction set, addressing modes, bus structure, input/output, memory, Arithmetic/Logic unit, control unit, and data, instruction and address flow

CO-4: Use Boolean algebra as related to designing computer logic, through simple combinational and sequential logic circuits

Programme & Course Outcomes of M.Sc(IT)

MS-114 :Mathematical Foundation of Computer Science

On completion of this course, the students will be able to:

CO-1: Be familiar with the basic terminology of functions, relations, and sets and demonstrate knowledge of their associated operations.

CO-2: Master to solve advanced mathematical problems, apply various methods of mathematical proof, and communicate solutions in writing

CO-3: Master to comprehend advanced mathematics, and present the material orally and in writing

CO-4: Utilize the knowledge of computing and mathematics appropriate to the discipline.

CO-5: Evaluate mathematical principles and logic design

MS-115 :Operating Systems

On completion of this course, the students will be able to:

CO-1: Learn and understand the mechanisms of OS to handle processes and threads and their communication, the mechanisms involved in memory management in contemporary OS.

CO-2: Gain knowledge on distributed operating system concepts that includes architecture, deadlock detection algorithms and agreement protocols.

CO-3: Understand and explain different approaches to memory management, structure and organization of the file system

CO-4: Understand the various security threats and their probable solutions.

MS-121 : Object Oriented Programming Using C++ & MS-125 : Programming Lab-II (based on MS-121)

On completion of this course, the students will be able to:

CO-1: Write, compile and debug programs in C++language. Use different data types, operators and console I/O function in a computer program.

CO-2: Design programs involving decision control statements, loop control statements and case control structures.

CO-3: Understand the implementation of arrays, pointers and functions and apply the dynamics of memory by the use of pointers.

CO-4: Comprehend the concepts of structures and classes: declaration, initialization and implementation.

Programme & Course Outcomes of M.Sc(IT)

CO-5: Apply basics of object oriented programming, polymorphism and inheritance.

CO-6: Use the file operations, character I/O, string I/O, file pointers, pre-processor directives and create/update basic data files.

MS-122 :Data and File Structures & MS-125 : Programming Lab-II (based on MS-122)

On completion of this course, the students will be able to:

CO-1: Be familiar with basic data structure and algorithms.

CO-2: Design and analyze programming problem statements

CO-3: Choose appropriate data structures and algorithms and use it to design algorithms for a specific problem.

CO-4: Handle operations like searching, insertion, deletion and traversing mechanism

CO-5: Come up with analysis of efficiency and proofs of correctness

MS-123 : Visual Basic & MS-126 Programming Lab-III(based on MS-123)

On completion of this course, the students will be able to:

CO-1: Design, create, build, and debug Visual Basic applications.

CO-2: Explore Visual Basic's Integrated Development Environment (IDE).

CO-3: Write and apply decision structures for determining different operations.

CO-4: Understand and identify the fundamental concepts of object-oriented programming.

CO-5: Perform tests, resolve defects and revise existing code.

MS-124 : RDBMS and Oracle & MS-126 Programming Lab-III(based on MS-124)

On completion of this course, the students will be able to:

CO-1: Gain the knowledge and understanding of Database analysis and design.

CO-2: Understand the use of Structured Query Language(SQL) and learn SQL syntax.

CO-3: Gain the knowledge of the processes of Database Development and Administration using SQL and PL/SQL.

CO-4: Understand and apply the concept of functional dependencies to design the database

CO-5: Understand and apply the concept of Transaction and Query processing

Course Outcomes (COs)

**M.Sc (IT) – II
Semester-3rd**

Code No.	Title of the Paper
MS-211	Web Technology
MS-212	Java Programming
MS-213	Software Engineering
MS-214	Computer Networks
MS-215	Programming Lab-IV (Web Technology)
MS-216	Programming Lab-V (Java Programming)

Semester-4th

Code No.	Semester System-IV
MS-221	Computer Graphics
MS-222	Linux Administration
MS-223	Research Methodology
MS-224	Artificial Intelligence
MS-225	Programming Lab-VI (Computer Graphics)
MS-226	Programming Lab-VII (LINUX Administration)

MS-211 : Web Technology & MS-215 : Programming Lab-IV (Web Technology)

On completion of this course, the students will be able to:

CO-1: Learn and use the knowledge of web publishing and technologies related with the website development.

CO-2: Learn client side and server side programming using Java Script and PHP

CO-3: Apply the knowledge of website development to design and publish website individually and as a team member.

CO-4: Upgrade the knowledge by learning new technologies and languages used for website development.

MS-212 : Java Programming & MS-216 : Programming Lab-V (Java Programming)

On completion of this course, the students will be able to:

CO-1: Learn the Object Oriented Programming concepts to write, compile and debug programs using Java language.

Programme & Course Outcomes of M.Sc(IT)

CO-2: Apply the concepts of object oriented programming like polymorphism, inheritance, Exception Handling, and Multithreading.

CO-3: Design and develop console and GUI applications using Java Programming Language.

CO-4: Work on programming project as individual or as team member is design, development and implementation phase.

MS-213 : Software Engineering

On completion of this course, the students will be able to:

CO-1: Understand the basic concepts, models, life cycle of software development.

CO-2: Learn higher level concepts like Re-engineering, Reverse Engineering, Forward Engineering, and CASE tools.

CO-3: Knowledge of all the steps of software engineering and their use and implementation in real problems

CO-4: Understanding of programming language and using it to develop software using all stages of software development.

Programme & Course Outcomes of M.Sc(IT)

MS-214 : Computer Networks

On completion of this course, the students will be able to:

CO-1: On completion of this course, the students will be able to:

CO-2: Understand the basic concepts, types of networks, OSI, and TCP/IP models with working of all the layers in detail

CO-3: Learn and understand the working of different hardware components used in networking and various communication protocols

CO-4: Learn and understand various issues involved in network security, and methods used to implement network security.

MS 221 : Computer Graphics & MS-225 : Programming Lab-VI (Computer Graphics)

On completion of this course, the students will be able to:

CO-1: Understand and explain various concepts related to Computer Graphics

CO-2: Implement various algorithms to scan, convert the basic geometrical primitives, transformations, Area filling, clipping.

CO-3: Describe the importance of viewing and projections.

CO-4: Explain various Illumination models and surface rendering methods.

MS-222 : LINUX Administration & MS-226 : Programming Lab-VII (LINUX Administration)

On completion of this course, the students will be able to:

CO-1: Install and configure Linux operating system and understand the basic set of commands and working of editors in Linux.

CO-2: Understand and work with Linux file system through terminal and GUI interface

CO-3: Discuss various types of commands and variable used in shell programming and write simple shell programs in Linux operating system

CO-4: Demonstrate the role and responsibilities of a Linux system administrator and make use of server commands

MS-223: Research Methodology

On completion of this course, the students will be able to:

CO-1: Understand the basic concepts of research and its methodologies

Programme & Course Outcomes of M.Sc(IT)

CO-2: Identify and formulate appropriate research problem topics and parameters

CO-3: Prepare a research proposal to undertake a research project

CO-4: Organize and conduct research in a more appropriate manner

CO-5: Write a research paper, research report and thesis and present the research work to audience

MS- 224 : Artificial Intelligence

On completion of this course, the students will be able to:

CO-1: Understand and explain the definition, components, and application areas of Artificial Intelligence

CO-2: Understand the concepts of Logical Reasoning and their use in knowledge representation and knowledge processing

CO-3: Describe the architecture and working of knowledge-based systems (Expert systems)

CO-4: Use PROLOG language to write and execute simple program for AI

CO-5: Explain various applications and limitations of Artificial Intelligence systems.



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